

Another report demanding special notice is the one by Mr. R. C. Punnett on the Enteropneusta, the collection brought together by Mr. Gardiner being the most extensive hitherto made in any one locality. This richness has enabled Mr. Punnett to attempt the study of the variation (that is to say, the development of local forms) displayed by certain members of the group, this having never been previously practicable. In addition to the description of new species of *Ptychodera* and *Balanoglossus*, the author takes the opportunity of describing a new generic type from Zanzibar, for which the name *Willeyia bisulcata* is proposed, characterised by its large size and the great length of the proboscis and collar. After discussing many debatable structural features connected with these curious organisms, Mr. Punnett takes occasion to express his opinion of the importance of Willey's theory as to the origin of gill-clefts, which he believes to obtain further support from the evidence of this group. To recapitulate the author's views in detail would occupy too much space, and it can only be mentioned that the gonads are suggested as being the prime factors in the segmentation of the Chordata, each gonad having ultimately acquired an independent aperture of escape from the body, which became subsequently used for respiration, and thus a gill-cleft.

If we pass over the accounts of the Chordata by Messrs. Cooper and Punnett, it is only from lack of that space necessary to do anything like justice to one of the most important biological and physiological works of our time. To conclude without expressing our opinion as to the business-like manner and thoroughness with which both the expedition itself and the examination and description of the specimens and the codifying of the general results have been carried out (so far as they are yet published) would, however, be alike ungracious and unappreciative.

R. L.

JOHN PARKINSON'S "PARADISUS."

Paradisi in Sole Paradisus terrestris. By John Parkinson. Faithfully reprinted from the edition of 1629. Pp. 1+612. (London: Methuen and Co., 1904.) Price 2l. 2s. net.

THIS is a handsome reprint of a notable book, which, even in its original form, never made so brave a show as does this facsimile, with its fine type, excellent paper, rough edges, and grey paper boards. The page illustrations suffer somewhat in sharpness, owing to the process by which they have been reproduced, in comparison with the cuts in the older editions, which were worked from the blocks themselves. It is a genuine reprint; with the exception of a half-title and the title-page set out above, the old herbalist's book is left to tell its own tale. We are glad to be spared the modern editor's introduction, which in this instance would have been an infliction.

John Parkinson, King's Herbalist, was born in 1567, and with John Gerard occupies a special position in our literature as one of our herbalists. Gerard's "Herball" was based upon Continental work, and very few cuts were due to him; Parkinson's books

were his own, woodcuts and text alike. Gerard's "Herball" was edited and much improved by Thomas Johnson in 1633, and was reprinted in 1636; Parkinson's "Paradisus," which came out in 1629, when the author had passed his sixtieth birthday, was reprinted in 1656, six years after his death, practically unaltered. He regarded the "Paradisus" as constituting three parts of a comprehensive treatise on plants—the garden of pleasant flowers, the kitchen garden, and the orchard. Eleven years later, the fourth part, his "Theatrum," appeared, devoted chiefly to medical plants, but in bulk much exceeding his previous publication.

We have before us copies of all the issues; the original issue of 1629, with its thin, foxed paper and striking woodcuts, and its reprints. Parenthetically it may be remarked that these blocks, measuring ten inches by six, do not appear to be built up, as box-wood blocks, but were cut along the grain, and consisted of pear-wood. The actual blocks are not extant, but judging from woodcuts of the same century we are justified in assuming that Parkinson's illustrations were produced as we have said. The old authors were economical of their blocks; Dodoens, Clusius, and their contemporaries were apt to square off their plants to fit the block, or to twist the plant to come within the limits available. Here we find many specimens displayed on the same block, sometimes ingeniously arranged in a give-and-take manner. No book gives a better idea of the gardens of the time, with their plans and plants, than the volume before us; the author starts with general principles of laying out or "ordering" his garden, and then goes on to describe what should grow in it—hardy flowers nearly all, but the variety of tulips, iris, narcissus, and similar plants strikes a modern reader. Many little touches of human personality shine through the accounts given; old colleagues and benefactors by whom certain bulbs or seeds were introduced are mentioned; some of those named may be found in the works of other authors, and we greet them as old friends; some of them appear in connection with their favourite flowers, as "John Tradescant his great Rose Daffodill," or "Mr. Wilmer's great double Daffodill." It is largely due to the revived love for hardy garden flowers, especially the narcissus, that Parkinson's book has of recent years become almost impossible to get, the price having risen from shillings to nearly as many pounds within one generation.

The second issue varied from the first by having a printed title-page in front of the engraved one, and although it boasted of being "much Corrected and Enlarged," many of the printer's errors noted in the first were not corrected in the second edition; the pages are not precisely the same, nor are the tables at the end, and the only noticeable enlargement is the letter-press title-page just mentioned.

The third issue is that now under review, but the publishers seem to have failed to notice the pun in the title, which at length runs thus:—

"Paradisi in Sole Paradisus Terrestris. Or a Garden of all sorts of pleasant flowers which our English ayre will permitt to be noursed upp: with A

Kitchen garden of all manner of herbes, rootes, and fruites, for meate or sause used with us, and An Orchard of all sorte of fruit-bearing Trees and shrubbes fit for our Land together With the right ordering, planting and preserving of them and their uses and virtues. Collected by John Parkinson, Apothecary of London, 1629." It will be observed that the first five words mean "of Park-in-Sun the Earthly Paradise," and this play upon his own name is missed in the special title of the reprint.

It is impossible even to indicate the charm of this old book; a long notice would still be inadequate, while to those who love old garden flowers and these quaint notices of them, this reprint will afford a new delight.

B. D. J.

MODERN ELECTRIC PRACTICE.

Modern Electric Practice. Edited by Magnus Maclean. In six volumes. Vol. i., pp. viii+270. Vol. ii., pp. vi+297. Vol. iii., pp. vi+285. (London: The Gresham Publishing Co., 1904.) Price 9s. net per volume.

THESE volumes have been published with the intention of providing a comprehensive treatise on the subject of modern electrical engineering, a subject now so large and so diversified that it is beyond the power of one man, however expert, to deal with it in all its aspects. The plan has therefore been adopted of inviting the collaboration of a number of authors, each writing of that section with which he is particularly conversant, and thus producing a sort of encyclopædia of electrical engineering which might be compared with such books as Watts's "Dictionary of Chemistry." It is difficult to form an estimate of the value of a book of this kind, which depends as much upon the skill and discretion which are shown in the selection and arrangement of the material as upon the merits possessed by the individual contributions.

Regarded as a whole we consider this compilation disappointing in the extreme. A really standard work of reference on electrical engineering would be a very welcome addition to electrical literature, a book to which a man could turn for information about any matter which happened to crop up in the course of his work, certain of finding a thorough *résumé* of the subject sufficient to give him the outlines of existing knowledge and to put him on the track of more detailed information if he required it. The volumes before us unfortunately cannot claim any such position; indeed, as a work of general reference they are almost useless. A series of text-books by different writers on different subjects does not make a comprehensive treatise because these text-books are bound between the same covers and "not sold separately." No serious effort seems to have been made to coordinate the material properly, and, in fact, almost the only attempt at uniformity which can be discovered is in the direction of print and paper. A single quotation from the preface is enough in itself to support this contention; the editor there says, "rises of temperature are given sometimes in degrees Fahrenheit and sometimes

in degrees Centigrade; dimensions of machines occasionally in feet and inches but more often in centimetres; magnetic flux density in lines per square inch in one article, and in lines per square centimetre in another." We can see no way in which to regard this paragraph other than as a confession of careless editing, as we should have thought the very first thing the editor would do would be to adopt a uniform system of units and notation throughout. Other instances of more serious carelessness might be quoted, but we will content ourselves by giving one example. In the three volumes already published we have come across two tables giving the relative conductivities and temperature coefficients of various substances; in one the values of the resistivities are given, in the other the relative conductivities. A very cursory examination shows that the two tables do not agree, and if they are compared more carefully we get results of which the following are specimens (the conductivity of iron being taken as the standard for comparing the two tables):—

Relative conductivity of iron		Table I. 16.2	Table II. 16.2
"	copper	97.5	90 & 92
"	mercury	1.65	1.56
"	platinum	19.0	13.4
"	aluminium	52	55

The agreement between the temperature coefficients is equally bad. We have purposely only compared above the figures for elementary substances, as those for alloys such as German silver, manganin, &c., which are in even worse disagreement, are valueless in one table as the percentage composition is not given. Comment on figures of this sort is needless.

Enough has probably been said to show that as a standard treatise on electrical engineering the value of these volumes is little or nothing. This is the more to be regretted as they have been produced in a style which may be described as lavish, and several of the contributors are in the front ranks of the profession, able to write with an authority on their particular subjects which cannot be called in question. It would not have required very much more trouble and care to have converted the publication into a first-class addition to the electrical engineer's library instead of leaving it as a book only to be valued on account of the occasional articles of exceptional merit which it contains. Space would not permit us to review these in detail here even were it profitable to do so. Suffice it to say that there are several contributions which thoroughly deserve to be read, some because of the admirable way in which they treat their subject-matter, and others because, in addition, they are practically the only existing English text-books on the subject. On the whole, however, we think the level is not very high, especially if scientific treatment be looked for; there is a general tendency for too much description, too much of an account of what the practical engineer has made, and too little of the theoretical principles on which his practice is based. It is evident, of course, that the book does not aim at discussing the theoretical side of electricity and magnetism, but even "modern practice" must be studied, if it is to be properly studied, with a certain